



Independent Electrical Contractors of New England, Inc.

TO: Sen. Tom Colapietro and Rep. Jim Shapiro
Sen. Kevin Witkos and Rep. Penny Bacchiocci
Members of the General Law Committee

From: Lisa Hutner, Executive Director

Date: February 25, 2010

Thank you for the opportunity to comment **in support of HB-5225, An Act Concerning Solar Work**, which is intended to: 1) Address safety concerns for workers; 2) Protect consumers by ensuring that solar PV systems are safely installed by properly licensed contractors; 3) Expand opportunities for Connecticut businesses and residents to reduce energy costs through solar PV energy systems by eliminating unnecessary obstacles for Connecticut's licensed electricians to become certified installers under the Connecticut Clean Energy Fund programs. 4) Promote "green jobs" by building confidence in solar PV technologies through appropriate training and licensing requirements.

The Independent Electrical Contractors of New England (IEC-NE) is working with the International Brotherhood of Electrical Workers and the National Electrical Contractors Association to support legislation to achieve these goals, as follows:

1. WORKER SAFETY

Today's solar energy panels/modules are high voltage technologies and should only be installed by qualified licensed professionals. Any solar panel installation guide, see attached, includes clear and specific warnings that solar PV work should be performed by a qualified electrician according to the provisions of the National Electrical Code (NEC). Licensed electricians are trained on the NEC and are updated each and every year on the code as part of their continuing education requirements.

Recognizing the inherent danger in working with high voltage technologies, the vast majority of states require solar PV systems to be installed by a licensed electrician. Only a handful of states and Puerto Rico have solar PV licensing requirements separate from the electrical license. In those states that do have solar PV licensing, solar is a specialty classification under the general electrical license and all appropriately licensed contractors can install solar systems without the solar specialty license. Only a few states allow contractors to obtain a solar specialty license and

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install systems without having the full electrical or plumbing license. In these states, the training requirements are substantially greater than the training requirements of Connecticut's limited solar licenses, creating very real safety concerns for workers and consumers.

Connecticut's occupational licensing laws authorize solar work to be performed by licensed electricians. In order to become a licensed electrician, an individual needs to complete a four-year apprenticeship training program of 8,000 hours as well as related classroom instruction. The apprenticeship training program includes training in solar photovoltaic and other energy systems. In addition, licensed electricians are required to take 7 hours per year of continuing education. Information relative to the installation of solar photovoltaic has been incorporated into the continuing education program.

However, the required training and related educational requirements needed to sit for the PV limited license examinations are not sufficient to protect the safety of workers or consumers. In Connecticut, an individual may obtain a PV-2 Limited Solar Electric Journey person license after the completion of a two year registered apprenticeship program or only one year equivalent experience and training, although they may perform work only in the employ of a licensed electrical contractor. A person may be eligible to sit for the PV-1 Limited Solar Electric Contractor license examination after two years (4,000 work hours) as a solar journey person (apprentice) and 144 hours of school/year or equivalent experience and training. These requirements may have been adequate when solar modules/panels were traditionally low voltage, however the new systems are considered high voltage. **We therefore believe the PV licenses should be sunsetted to ensure that solar PV systems are only installed by qualified, licensed individuals.**

We also support Section 3 of the bill which eliminates the existing exemption to the state's occupational licensing laws that allows workers who are not trained at all to hoist, place and anchor solar photovoltaic panels, connectors, towers and turbines. A PV panel generates DC electricity as soon as it is taken out of the box and exposed to sunlight or other light sources. In fact, product manufacturers recommend that the panel remains packed in the box until the time of installation and that when installing or working with module wiring, the panel face is covered completely with opaque material to halt production of electricity. Consequently, simply placing and securing the panel is tantamount to installing it since the panel is live right out of the box. In addition, many contractors have witnessed unsafe practices relative to the placement of these panels, including wires dangling in water pooled on the roof.

Contact with electrically active parts of the panel/module such as terminals can result in burns, sparks, and lethal shock whether the module is connected or disconnected. When modules are connected in series, voltages are additive. When modules are connected in parallel, current is additive. Consequently, a multi-module system can produce high voltages and current which constitute a potentially lethal hazard. We do not believe that individuals who are not licensed,

and who are untrained should be put in harm's way by being allowed to hoist, place or secure panels that generate significant electrical power.

2. CONSUMER SAFETY

As you know, states establish licensing requirements for contractors in order to protect consumers from unsafe practices and protect the reputation of the industry, as improper installation may create safety risks or result in poor system performance. In fact, during the 1970s when solar energy was first marketed to homeowners and business, there were no licensing requirements. Solar energy systems were therefore installed by individuals who lacked the training and experience to properly install and service the systems. As a result, consumers were very unhappy with the quality and performance of such installations. Many consumers continue to be wary of solar energy because it is very expensive and they have little experience with it. Requiring solar PV systems to be installed by licensed individuals who are fully trained in electrical wiring as well as photovoltaic systems, will go a long way toward protecting consumers and building confidence in solar PV systems.

3. EXPANDING ENERGY EFFICIENCY OPPORTUNITIES

In order to expand opportunities for Connecticut residents and businesses to take advantage of incentive programs under the Connecticut Clean Energy Fund Programs, we need to eliminate unnecessary obstacles for licensed electricians to participate in the program. Currently, Connecticut's energy efficiency programs create barriers for Connecticut's skilled tradespeople to become eligible as certified installers even though Connecticut's occupational licensing laws authorize E-1 and E-2 electrical license holders to perform solar photovoltaic work. However, the Connecticut Clean Energy Fund requires licensed electricians to meet unnecessary training and experience requirements which have severely limited their opportunity to compete for solar PV jobs in Connecticut.

Specifically, the program includes the following requirements in order to become a "Qualified Installer" or "Provisional Installer":

- A "Qualified Installer" is an installation supervisor who has taken a PV installation training course and has completed at least three installations as the lead installer or ten installations as an apprentice. This is an arbitrary requirement. An individual can work on 10 installations as an apprentice and have very little knowledge regarding grounding and wiring electrical systems.
- "Provisional Installer" - A PV-1 or an E-1 licensed electrician must install 3 systems subject to review by CCEF, although one installations may include a grid-tied PV system to their home (or business). Inasmuch as licensed electricians are already authorized by the state Department of Consumer Protection to install solar PV systems, this requirement effectively shuts out the state's licensed electricians from participating in the program. Given the high cost

of solar PV systems, a homeowner is not going to choose to have a system installed without the advantage of a rebate.

- In addition, as of January 4, 2010, the CCEF will require all approved eligible PV contractors to have at least one permanent employee successfully complete and pass the NABCEP entry level PV exam. Current approved eligible PV contractors will have a grace period of one year (January 4, 2011) to complete this training requirement. All provisional installation contractors will be required to complete the NABCEP entry level certificate exam before final approval to the CCEF approved eligible installation contractor list.

Several of our members have pursued approval as a "Qualified Installer" or "Provisional Installer". The process has taken months and effectively shut them out of opportunities to install solar PV systems. The new requirement will further undermine the ability of licensed electricians to perform solar PV work in Connecticut even though licensed electricians can perform such work in almost every state in the country without additional licensure. **We therefore recommend the inclusion of language in the bill which provides that a properly licensed electrician is authorized as a qualified installer for purposes of the CT Clean Energy Fund program.**

4. PROMOTING GREEN JOBS

The American Recovery and Reinvestment Act of 2009 was enacted in an effort to stimulate economic recovery and ensure that hard-working Americans are given the opportunity to go back to work or continue to work in a dynamic and growing economy. The Act includes funding to spur investment in energy efficiency technologies, including \$3 million for rebates for residential and commercial solar photovoltaic (PV) systems.

However, given the lengthy and time-consuming process for licensed electricians to become certified installers under the CT Clean Energy Fund programs, many decide not to participate, undermining the effectiveness of such incentive programs. By removing these barriers and encouraging licensed electricians to participate in solar incentive programs, we will create more job opportunities for Connecticut residents.

Again, thank you for the opportunity comment. We are willing to work with committee members and other interested parties to develop legislation that achieves these important goals.

The Independent Electrical Contractors of New England is the premier trade association representing Connecticut, Massachusetts and Rhode Island independent electrical contractors aggressively working with the industry to establish a free environment for merit shop -- a philosophy that promotes the concept of free enterprise, open competition and economic opportunity for all.